REMARKS

Applicant has reviewed and considered the Office Action mailed on November 28, 2003, and the references cited therewith.

Claims 1, 12, 25, 32, and 44 are amended, no claims are canceled, and no claims are added; as a result, claims 1-9, 11-14, 16-41, and 43-57 remain pending in this application. The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Claims 1, 12, 25, and 32 find support in the specification, for example, on page 10, line 26- page 11, line 4, and page 12, lines 5-14.

Claim 44 finds support in the specification, for example, on page 14, lines 15-19.

§103 Rejection of the Claims

Claims 1-9, 11-14, 16-41, 43-57 were rejected under 35 USC § 103(a) as being unpatentable over Lopatin et al. (U.S. 6,555,909) in view of Lashmore et al. (U.S. 5,456,819). Applicant traverses these grounds for rejection.

Applicant reserves the right to swear behind the reference Lopatin et al. (hereafter Lopatin) at a later date. Applicant submits that the instant claims are patentable over Lopatin in view of Lashmore et al. (hereafter Lashmore) for at least the reasons stated below.

As noted throughout the Office Action Lopatin does disclose electrochemically reducing oxides on the surface of a dual-purpose layer as recited in the independent claims of the instant application.

Lashmore deals with reducing oxides on a surface of a material followed by deposition. Lashmore includes the material to be deposited in his processing cell in the form of an electrolyte and/or anode. *See the detailed description only describing nickel deposition.* Applicant did not find in Lashmore a teaching or suggestion of electrochemically reducing a surface using an electrolyte containing a cation species that is different than the material being deposited, as recited in claim 1, as amended. Since neither Lopatin or Lashmore teach or suggest depositing a conductive interconnect layer on the surface of the dual-purpose layer, where the conductive interconnect layer includes conductive material other than the cation species in the electrolyte

used to electrochemically reduce oxide, the combination of Lopatin and Lashmore does not teach or suggest all the elements of amended claim 1. Thus, Applicant submits that claim 1 is patentable over Lopatin in view of Lashmore.

Claims 12, 25, and 32 recite similar elements as the elements of claim 1 discussed above and are patentable over Lopatin in view of Lashmore for the reasons stated above and additionally in further view of the elements of these independent claims.

As to claims 26 and 27, the Office Action states "**Lopatin** discloses wherein the anode comprises titanium (col. 6, lines 49-54) and **Lashmore** discloses wherein the first electrolyte comprises titanium trichloride, titanium sulfate, titanium bromide, titanium trichloride, titanium iodide, titanium fluoride, or mixtures thereof." Applicant respectfully disagrees.

At column 6, lines 49-54, Lopatin discusses titanium as a barrier layer on which a material may be deposited. Applicant can not find a teaching or suggestion in Lopatin of anode comprising titanium. Lopatin is void of a teaching or suggestion of elements for electrochemically reducing oxides, as noted in the Office Action. Further, this discussion is with respect to the use of a seed layer, *see column 6, lines 51-54,* which is contrary to elements of the instant claims 26-27. Though Lopatin states "seed layers (where used)," Lopatin does not disclose which materials are used with seed layers and which materials are not used with seed layers.

Lashmore discusses an electrolyte including nickel sulfate or nickel sulfamate with a nickel anode where nickel is used for reducing and depositing on a copper-tungsten surface. *See, Lashmore, column 4, lines 45-67.* In Lashmore, nickel is not the material to be reduced or the material on which a material deposition is made. Applicant can not find a teaching or suggestion in Lashmore of a species of a material used as a component of an electrolyte for reducing oxides on a surface and as an anode of the reduction system, where the species is different than the material to be deposited on the surface. Thus, combining Lashmore's nickel electrolyte/anode combinations and Lopatin's titanium barrier layer to be reduced and on which a material is to be deposited does not teach or suggest an electrolyte including titanium sulfate, titanium bromide, titanium trichloride, titanium iodide, titanium fluoride, copper sulfate, or mixtures thereof.

Applicant respectfully submits that Lopatin in view of Lashmore does not teach or suggest all the elements as recited in claims 26 and 27, and, thus claims 26 and 27 are patentable over Lopatin in view of Lashmore.

With respect to independent claim 44, Lopatin does not disclose electrochemically reducing oxides or details regarding depositing material on a surface of a dual-purpose layer. Further, Applicant can not find in Lashmore a teaching or suggestion regarding injecting a second electrolyte into the single electrochemical reaction cell after electrochemically depositing the conductive interconnect layer to an initial thickness to deposit additional material to thicken the layer of conductive interconnect layer to a selected thickness as recited in claim 44, as amended. Combining the teachings of Lopatin and Lashmore does not cure the deficiencies in these references with respect to amended claim 44. Since the combination of Lopatin and Lashmore does not teach or suggest all the elements as recited in claim 44, Lopatin in view of Lashmore does not establish a *prima case* of obviousness with respect to claim 44. Thus, Applicant submits that claim 44 is patentable over Lopatin in view of Lashmore.

With respect to independent claim 45, Lopatin does not disclose electrochemically reducing oxides on a surface of a dual-purpose layer. Thus, Lopatin does not disclose an electrolyte including copper sulfate, as recited in claim 45. Applicant can not find a teaching or suggestion in Lashmore of an electrolyte including copper sulfate. Thus, applicant submits that the combination of Lopatin and Lashmore does not teach or suggest an electrolyte including copper sulfate as recited in claim 45 and that claim 45 is patentable over Lopatin in view of Lashmore.

With respect to independent claim 47, Lopatin does not disclose electrochemically reducing oxides on a surface of a dual-purpose layer. Thus, Lopatin does not disclose an electrolyte including an ethylene diamine tetra acetate, as recited in claim 47. Applicant can not find a teaching or suggestion in Lashmore of an electrolyte including ethylene diamine tetra acetate, as recited in claim 47. Thus, applicant submits that the combination of Lopatin and Lashmore does not teach or suggest an electrolyte including ethylene diamine tetra acetate as recited in claim 47 and that claim 47 is patentable over Lopatin in view of Lashmore.

Applicant submits that the independent claims are patentable over Lopatin in view of Lashmore, and, therefore, the claims depending from these independent claims are patentable over Lopatin in view of Lashmore.

Applicant respectfully requests withdrawal of these rejections of claims 1-9, 11-14, 16-41, 43-57, and reconsideration and allowance of these claims.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2157 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

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Date 1 MARCH 2004

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 1 day of March, 2004.

Tina Kohut
Name

Signature